



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
**COMMISSION ON WATER RESOURCE MANAGEMENT**  
P.O. BOX 621  
HONOLULU, HAWAII 96809

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KEN C. KAWAHARA, P.E.  
DEPUTY DIRECTOR

**STAFF SUBMITTAL**

for the meeting of the  
**COMMISSION ON WATER RESOURCE MANAGEMENT**

February 17, 2010  
Honolulu, Oahu

Alii Turf Co., LLC  
APPLICATION FOR A WATER USE PERMIT  
All Turf Well (Well No. 3001-01), TMK 7-1-001:006, WUP No. 876  
Future (Agricultural) Use for 0.115 mgd  
Wahiawa Ground Water Management Area, Oahu

APPLICANT:

Alii Turf Co., LLC  
P.O. Box 689  
Kahuku, HI 96731

LANDOWNER:

Same

SUMMARY OF REQUEST:

The applicant requests that the Commission on Water Resource Management (Commission) approve a water use permit for an allocation of 0.115 million gallons per day (mgd) of potable ground water from a new well (Well No. 3001-01) to supply 55.7 acres of irrigation demand.

LOCATION MAP: See Exhibit 1

BACKGROUND:

On July 13, 2009, a Well Construction and Pump Installation Permit application was submitted to staff. Staff has not yet issued the Well Construction Permit due to some outstanding issues with the driller. However, the applicant has stated that they wanted to move forward with the Water Use Permit application.

On October 14, 2009, a completed water use permit application was received from Alii Turf Co., LLC by the Commission on Water Resource Management (Commission). Additional information regarding the source, use, notification, objections, and field investigation(s) is provided in Attachment A.

ANALYSIS/ISSUES:

Section 174C-49(a) of the State Water Code establishes seven (7) criteria that must be met to obtain a water use permit. An analysis of the proposed permit in relation to these criteria follows:

(1) Water availability

Through the Hawaii Water Plan, the Commission has adopted 23 mgd as the sustainable yield for the Wahiawa Aquifer System. Individual existing water use permits in this aquifer system are shown in Exhibit 2. A summary of the current ground water conditions in the aquifer is provided in Table 1:

**Table 1. Wahiawa Aquifer System**

<u>ITEM</u>	Wahiawa Aquifer System (mgd)
<b>Sustainable Yield</b>	23
Less: Other Existing Water Use Permits (shown in Exhibit 2a)	21.928
Reservation to DHHL	0
<b>Subtotal (Current Available Allocation)</b>	1.072
Less: Other Completed Applications (shown in Exhibit 3)	0.359
Less: This Application	0.115
<b>Subtotal (Potential Available Allocation/Allocation Deficit)</b>	0.598

Therefore, there is adequate water available to accommodate this request.

(2) Reasonable-beneficial

Section 174C-3 HRS defines "reasonable-beneficial use" is

*"...the use of water in such a quantity as is necessary for economic and efficient utilization, for a purpose, and in a manner which is both reasonable and consistent with the state and county land use plans and the public interest".*

*1. Purpose of Use*

The applicant is requesting the use of potable water to irrigate 55.7 acres of crops, livestock and composting. These are considered agricultural uses of water. The Declaration of Policy section, §174C-2(c) HRS, states that the Water Code shall be liberally interpreted to obtain maximum beneficial use of the waters of the State for various purposes including agricultural uses.

## *II. Quantity Justification*

The applicant is requesting a total of 0.115 mgd, broken down as follows:

### Crops

The applicant states that they need 34,200 gpd for crop irrigation. The basis for this is 1,500 gpd/acre for 22.8 acres.

The applicant stated that they will be growing the following crops: banana, papaya, vegetable crops and fruit trees.

Since its presentation to the Commission in April 2008, the Commission staff has used an ArcGIS based numerical simulation model, created in conjunction with the College of Tropical Agriculture and Human Resources (CTAHR), from the University of Hawaii, as a **guideline** to help review irrigation requirements for proposed water use permit applications. Most applications do not have the level of irrigation analysis as provided by this application. Nevertheless, it is useful to use the Irrigation Water Requirement Estimation Decision Support System (IWREDSS) model for comparative purposes.

Based on the IWREDSS, staff has calculated the following duties:

Banana – 2,199 gpd/acre  
Papaya – 1,742 gpd/acre  
Vegetable crops – 3,345 gpd/acre  
Fruit trees – 2,678 gpd/acre

Since all of these estimates are greater than the applicant's duty, the 1,500 gpd/acre appears to be reasonable.

### Ornamental and Nursery

The applicant has stated that they need 1,500 gpd/acre for nursery plants. Through the IWREDSS, staff has calculated 4,371 gpd/acre for nursery plants. Therefore the applicant's request appears to be reasonable.

### Livestock Processing

The applicant has stated that 500 gpd/acre is required for 7.5 acres of livestock production. Staff discovered through a subsequent discussion with the applicant that approximately 500 pigs could be raised, at about 2.5 gpd/pig based on actual demands (100 pigs use a 255 gallon tank daily). Staff has consulted the draft copy of "A Literature Compilation of Water Usage For Hawaii", prepared by the Water Resources Research Center of the University of Hawaii, which estimates that pigs use approximately 2.5 gpd/pig. Therefore a new demand would be  $500 \text{ pigs} \times 2.5 \text{ gpd/pig} = 1,250 \text{ gallons}$ .

### Turf Irrigation

The applicant has stated that they need 3,600 gpd/acre for turf irrigation. Through the IWREDSS, staff has calculated 3,694 gpd/acre. Therefore the applicant's request appears to be reasonable.

### Composting

The composting portion of the allocation was initially inadvertently left off of the application except for a line item in Table 2. Subsequent conversation with the applicant indicates that they will need 1,500 gpd/acre, multiplied by 1.8 acres, for a total of 2,700 gallons per day. Staff does not have a comparable duty reference for composting. However, Hawaiian Earth Products (HEP), who also has an application pending with the CWRM, is applying for 3,500 gpd/acre. The difference is probably attributed to HEP's requirement to accelerate the composting process, as composting is the primary use. Therefore, 1,500 gpd/acre appears to be reasonable.

### Summary for demands

All of the applicant's duties appear to be reasonable, with the corrected values for livestock production. Using the new livestock number, the total amount that staff considers to be reasonable is  $34,200 \text{ gpd (crops)} + 5,250 \text{ gpd (nursery)} + 72,000 \text{ gpd (turf)} + 1,250 \text{ gpd (livestock)} + 2,700 \text{ gpd (composting)} = \mathbf{115,400 \text{ gpd}}$ .

### *III. Efficiency of Use*

The applicant will use drip irrigation for crops and sprinklers for turf, which are as efficient as possible.

### *IV. Analysis of Practical Alternatives*

The applicant has identified the availability of following alternatives:

1. **Municipal sources** – none available

2. **Wastewater reuse** – none available
  3. **Ditch system** – none available.
  4. **Desalinization** – desalinization of salt water obtainable by drilling a well through the fresh water lens would be cost prohibitive.
  5. **Surface water** – Surface water from the Kaukonahua Stream was considered but is not considered feasible for two reasons. First, there is a property between the Stream and the applicant's parcel (right-of-ways would be necessary). Second, recently adopted operating changes keep the reservoir/stream level low due to dam safety concerns, which makes the water turbid and unreliable.
  6. **Conservation measures** – Water use will be limited to actual plant ET requirements.
  7. **Other** – none
- (3) Interference with other existing legal uses

This well has not yet been constructed. Analysis from the pump tests required for this well will show possible adverse effects on other existing legal uses.

(4) Public interest

Public interest is defined under §174C-2 - Declaration of policy, as follows:

*“(c) The state water code shall be liberally interpreted to obtain maximum beneficial use of the waters of the State for purposes such as domestic uses, aquaculture uses, irrigation and other agricultural uses, power development, and commercial and industrial uses. However, adequate provision shall be made for the protection of traditional and customary Hawaiian rights, the protection and procreation of fish and wildlife, the maintenance of proper ecological balance and scenic beauty, and the preservation and enhancement of waters of the State for municipal uses, public recreation, public water supply, agriculture, and navigation. Such objectives are declared to be in the public interest.”*

Additionally, there have been no comments or objections to this application.

(5) State & county general plans and land use designations

The proposed uses are in the State **Agricultural** District, and the county zoning is AG-1. Therefore, the proposed use is consistent with these land use designations.

Normal agency review includes:

- 1) the State's Department of Land and Natural Resources (DLNR) and its State Parks, Aquatic Resources, Historic Preservation, and Land Divisions; the Department of Health (DOH) with its Clean Water, Safe Drinking Water, and Wastewater Branches; the Department of Hawaiian Home Lands (DDHL), and Land Use Commission (LUC); and the Office of Hawaiian Affairs (OHA).
- 2) the County's County Council, Department of Planning and Permitting, and the Department of Water Supply;

These proposed uses are consistent with the state and county general plans and land use designations.

The Office of Hawaiian Affairs submitted concerns about the livestock numbers (attached as Exhibit 4). These concerns were addressed earlier in the *Quantity Justification* section above.

The Division of Aquatic Resources has expressed concerns over surface water impacts, which should be addressed by the pump tests performed through the Well Construction Permit process. They have also expressed concerns over the runoff from the facility entering downgradient streams. The DAR comments are attached as Exhibit 5. A special condition can be attached which requires the applicant to obtain appropriate permits from the Department of Health as a special condition of this permit.

(6) County land use plans and policies

Again normal County review includes County Council, Department of Planning and Permitting, and the Department of Water Supply. No comments or objections have been made.

Therefore, this application meets the county land use plans and policies.

(7) Interference with Hawaiian home lands rights

All permits are subject to the prior rights of Hawaiian home lands. The Department of Hawaiian Home Lands (DHHL) and the Office of Hawaiian Affairs have reviewed this application and made no comments or objections. Further, standard water use permit conditions 3.g., 6., and 9.f. notify all water use permittees that their permits are subject to and cannot interfere with Hawaiian home land rights.

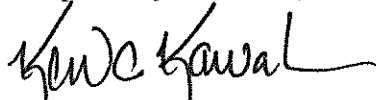
Therefore, this application will not interfere with Hawaiian home lands rights.

RECOMMENDATION:

Staff recommends that the Commission approve the issuance of water use permit no. 876 to Alii Turf Co., LLC for the reasonable and beneficial use of 0.115 million gallons per day of potable water for agricultural use from the All Turf Well (Well No. 3001-01), subject to the standard water use permit conditions listed in Attachment B and the following special conditions:

1. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.
2. In the event that the tax map key at the location of the water use is changed, the permittee shall notify the Commission in writing of the tax map key change within thirty (30) days after the permittee receives notice of the tax map key change.
3. The applicant shall obtain the necessary permits from the Department of Health or any other agencies, pertaining to the implementation of Best Management Practices to prevent runoff into adjacent streams.

Respectfully submitted,



KEN C. KAWAHARA, P.E.  
Deputy Director

Attachment(s): A (Water Use Permit Detailed Information)  
B (Water Use Permit Standard Conditions)

Exhibit(s): 1 (Location Map)  
2a&b (Existing Water Use Permits and 12-Month Moving Average Withdrawal)  
3 (Pending Water Use Permit Applications)  
4 (OHA comments)  
5 (DAR comments)

APPROVED FOR SUBMITTAL:



LAURA H. THIELEN  
Chairperson

**WATER USE PERMIT DETAILED INFORMATION****Source Information****AQUIFER:**

	Wahiawa System, Central Sector, Oahu
Sustainable Yield:	23 mgd
Existing Water Use Permits:	21.928 mgd
Available Allocation:	1.072 mgd
Total other pending applications:	0.359 mgd
This application:	0.115 mgd

**WELL:**

not yet drilled

**Use Information**

Quantity Requested:	0.115 gallons per day.
Future Type of Water Use:	Agricultural
Place of Water Use:	TMK: 7-1-001:005

Wahiawa Aquifer System

Current 12-Month Moving Average Withdrawal (See Exhibit 2): 0.259 mgd (as of 9/09)

**Public Notice**

In accordance with HAR §13-171-17, a public notice was published in the Honolulu Advertiser on November 27, 2009 and December 4, 2009 and a copy of the notice was sent to the Mayor's office. Copies of the completed application were sent to the Department/Board of Water Supply, Planning Department, Department of Land Utilization (Oahu only), Department of Health, Department of Hawaiian Home Lands, Office of Hawaiian Affairs, the various divisions within the Department of Land and Natural Resources, and other interested parties for comments. Written comments and objections to the proposed permit were to be submitted to the Commission by December 18, 2009.

**Objections**

The public notice specifies that an objector meet the following requirements: (1) state property or other interest in the matter; (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; (3) state all grounds for objections to the proposed permits, (4) provide a copy of the objection letter(s) to the applicant, and (5) submit objections meeting the previous requirements to the Commission by December 18, 2009.



To the best of staff's knowledge there are no objectors who have property interest within the Wahiawa Aquifer System or who will be directly and immediately affected by the proposed water use.

Briefs in Support

Responses to objections, or briefs in support, regarding the application are required to be filed with the Commission ten (10) days after an objection is filed and, presumably, copies are served to the applicant. No briefs in support were filed with the Commission.

**STANDARD WATER USE PERMIT CONDITIONS**

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)
2. The right to use ground water is a shared use right.
3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
  - a. Can be accommodated with the available water source;
  - b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
  - c. Will not interfere with any existing legal use of water;
  - d. Is consistent with the public interest;
  - e. Is consistent with State and County general plans and land use designations;
  - f. Is consistent with County land use plans and policies; and
  - g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).
4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.
5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
  - a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
  - b. The interim or permanent instream flow standard, as applicable, must be amended.
6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.
7. The water use permit application and submittal, as amended, approved by the Commission at its February 17, 2010 meeting are incorporated into this permit by reference.
8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.
9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
  - a. protect the water sources (quantity or quality);
  - b. meet other legal obligations including other correlative rights;
  - c. insure adequate conservation measures;

- d. require efficiency of water uses;
- e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
- f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
- g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

- 10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).
- 11. This permit shall be subject to the Commission's periodic review of the Wahiawa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Wahiawa Aquifer System, or relevant modified aquifer(s), is reduced.
- 12. A permit may be transferred, in whole or in part, from the permittee to another, if:
  - a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
  - b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

- 13. The use(s) authorized by law and by this permit do not constitute ownership rights.
- 14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.
- 15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Wahiawa Ground-Water Management Area.
17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.
18. Special conditions in the attached cover transmittal letter are incorporated herein by reference.
19. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.



# Aquifer System Area Water Use Permit Index *(total)*

ISLAND OF OAHU

Aquifer System Ground Water Management Area: **WAHIAWA**

Sustainable Yield = 23

WUP No	Approved	Applicant	Well No.	Well Name	WUP (mgd)	12-MAV (mgd)
032	6/2/1993	WAIALUA SUGAR	3102-02	PUMP 24	2.580	
138	7/19/1995	WAIALUA SUGAR	3203-02	PUMP 26	1.720	
433	6/5/1996	U.S. NAVY	3100-02	WAHIAWA DEEP	0.208	
464	5/14/1997	U.S. ARMY	2901-02	SCHOFIELD SHAFT	5.648	
464	5/14/1997	U.S. ARMY	2901-03	SCHOFIELD SHAFT		
464	5/14/1997	U.S. ARMY	2901-04	SCHOFIELD SHAFT		
464	5/14/1997	U.S. ARMY	2901-10	SCHOFIELD SHAFT		
598	5/17/1989	HONOLULU BWS	2902-01	WAHIAWA II		
598	5/17/1989	HONOLULU BWS	2902-02	WAHIAWA II	1.000	
717	11/20/1987	GALBRAITH ESTATE	3103-01	DEL MONTE #5	2.000	
765	7/12/2006	Sandwich Isles Communications	2801-03	SIC-01	0.100	
826	2/21/2008	Kelena Farms LLC	3203-01	WScO. Pump 25	1.442	
842	5/17/1989	HONOLULU BWS	2901-08	WAHIAWA I	3.270	
842	5/17/1989	HONOLULU BWS	2901-09	WAHIAWA I		
842	5/17/1989	HONOLULU BWS	2901-11	WAHIAWA I		
870	6/20/2001	James Campbell Co, LLC	2803-05	Del Monte 3	3.960	
870	6/20/2001	James Campbell Co, LLC	2803-07	Del Monte 4		

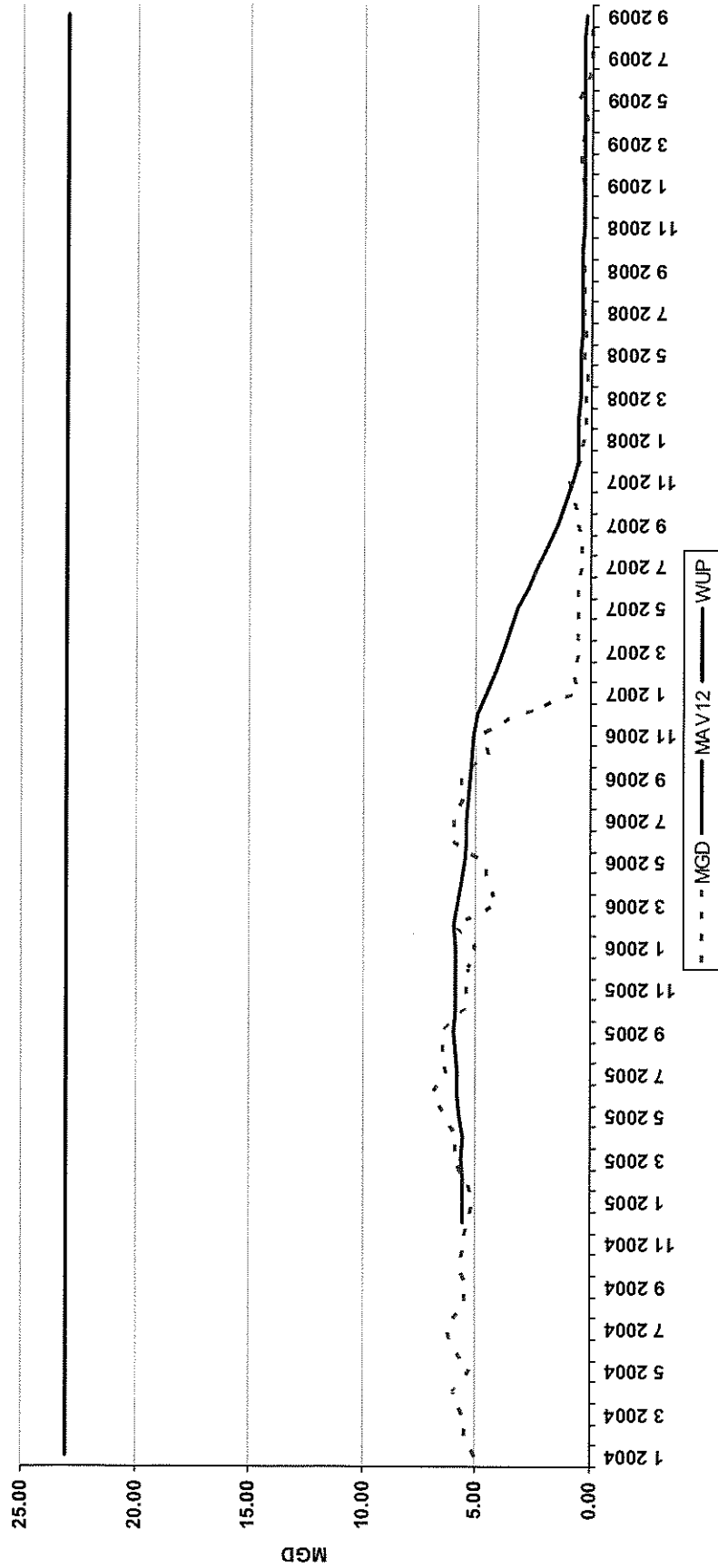
Summary for WAHIAWA (17 detail records) **Totalling** 21.928

**Available** 1.072

Aquifer Code: 
 Aquifer System: 
 SY MGD: 
 Beginning: 
 Ending: 
 Compute 12-Month Moving Average: ☐

Exclude Saltwater?: ☐
 Exclude Tunnel?: ☐
 Exclude Caprock?: ☐

### 12 Month Moving Average



- [Well Index](#)
- [View Pumpage Selected Work](#)
- [View Aquifer Wells Selected](#)
- [View Final Output Detail](#)
- [Print Report](#)

## Pending Water Use Applications

<i>WUPNO</i>	<i>Well No</i>	<i>Applicant</i>	<i>Well Name</i>	<i>MGD</i>	<i>Rcvd Date</i>	<i>Accept</i>
<b>Aquifer System: Wahiawa</b>						
876	3001-01	Alii Turf Co., LLC	Alii Turf	0.115	7/13/2009	10/14/200
879	3104-02	Hawaiian Earth Products	HEP-1	0.359	8/27/2009	9/11/2009
				2 WUPAs totalling	0.474	
				2 Total WUPAs for	0.474	

## EXHIBIT 3



STATE OF HAWAII  
Department of Land and Natural Resources  
**DIVISION OF AQUATIC RESOURCES**

MEMORANDUM

TO: Dan A. Polhemus, Administrator *DP*  
FROM: Glenn R. Higashi, Aquatic Biologist *GRH*  
SUBJECT: Comments on Water Use Permit Application (WUPA No. 876)

Comments Ken C. Kawahara  
Requested By: Commission on Water Resource Management  
Date of Request: 11/24/09 Date Received: 11/24/09

Summary of Project

**Title:** Water Use Permit Application (WUPA No. 876) for Alii Turf Co., LLC for Well No. 3001-01.

**Project By:** Alii Turf Co., LLC  
Kahuku, HI 96731

**Location:** Wahiawa System, Central Sector, Oahu TMK: 7-1-001:006

Brief Description:

The applicant, Alii Turf Co., LLC proposes to withdraw 115,200 gallons per day (averaged over 1 year) of ground water from Well No. 3001-01 in Wahiawa, Oahu, Tax Map Key 6-4-03:001. This application is to accommodate new irrigation water requirements for the proposed agricultural development of 58.3 acres of land for crops, mixed livestock and compost.

Comments:

The Division of Aquatic Resources (DAR) has some concerns to this request since the proposed project may have impacts on aquatic resource values in the area. Since this application is for a proposed new well a pump test should be performed on this well to determine if there are any impacts on any streams or aquatic resources in this area that will be affected by this proposed activity.

The proposed agricultural development is also adjacent to the north fork of the Kaukonahua Stream which is part of the Wahiawa Public Fishing Area. Best Management Practices (BMPs) should be incorporated to prevent runoff of sediments, feces, etc. from the adjacent agricultural development parcels-fruit tree and mixed livestock into the stream environment.

PHONE (808) 594-1888



RECEIVED  
COMMISSION ON WATER  
RESOURCE MANAGEMENT

2009 DEC 28 AM 8:23

FAX (808) 594-1865

**STATE OF HAWAII**  
**OFFICE OF HAWAIIAN AFFAIRS**  
711 KAPI'OLANI BOULEVARD, SUITE 500  
HONOLULU, HAWAII 96813

HRD09/4750

December 21, 2009

Ryan Imata  
Commission on Water Resource Management  
P.O. Box 621  
Honolulu, Hawai'i 96809

**RE: Request for comments on the proposed water use permit application (WUPA),  
Wahiawā, O'ahu, TMK: 7-1-01:016.**

Aloha e Ryan Imata,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter MA-3512. OHA has reviewed the project and offers the following comments.

OHA appreciates that the applicant intends to begin a hog operation and banana patch in the area; however we see that 3,750 gallons of water per day are to be used for an anticipated use (WUPA, page two) and not an existing use. Of additional note is the overall water requirements estimate for mature sows at two liters per minute, which the applicant translates into 50 to 100 gallons per minute for 100 to 200 pigs. OHA points out that this estimate is vague in terms of total numbers of animals (100 ranging to 200) and that the sows won't be drinking two liters per minute 24 hours per day. We ask the Commission on Water Resource staff to lend their expertise to these numbers and for the applicant to clarify.

Thank you for the opportunity to comment. If you have further questions, please contact Grant Arnold by phone at (808) 594-0263 or e-mail him at [granta@oha.org](mailto:granta@oha.org).

'O wau iho nō me ka 'oia 'i 'o,

A handwritten signature in black ink, appearing to read "Clyde W. Nāmu'o".

Clyde W. Nāmu'o  
Administrator